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nearly all of the flowers far enough advanced to open, had fully opened. At 6:00 P. M., none had closed. When the next observation was made at 7:30, nine-tenths of the flowers had closed, and by 7:45 all were closed."

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Explanation of Plate 299.

FIG. 1. *Talinum teretifolium*, showing induviate stem, and copiously branched dichasium.

FIG. 2. Tuberiform branch of *T. teretifolium*, produced in the fall of 1895, and sprouted in the spring of 1896.

FIG. 3. *Talinum napiforme* DC.

FIG. 4. *Talinum Greenmanii* n. sp.

Rarities from Montana.—I.

BY P. A. RYDBERG.

(PLATES 300, 301.)

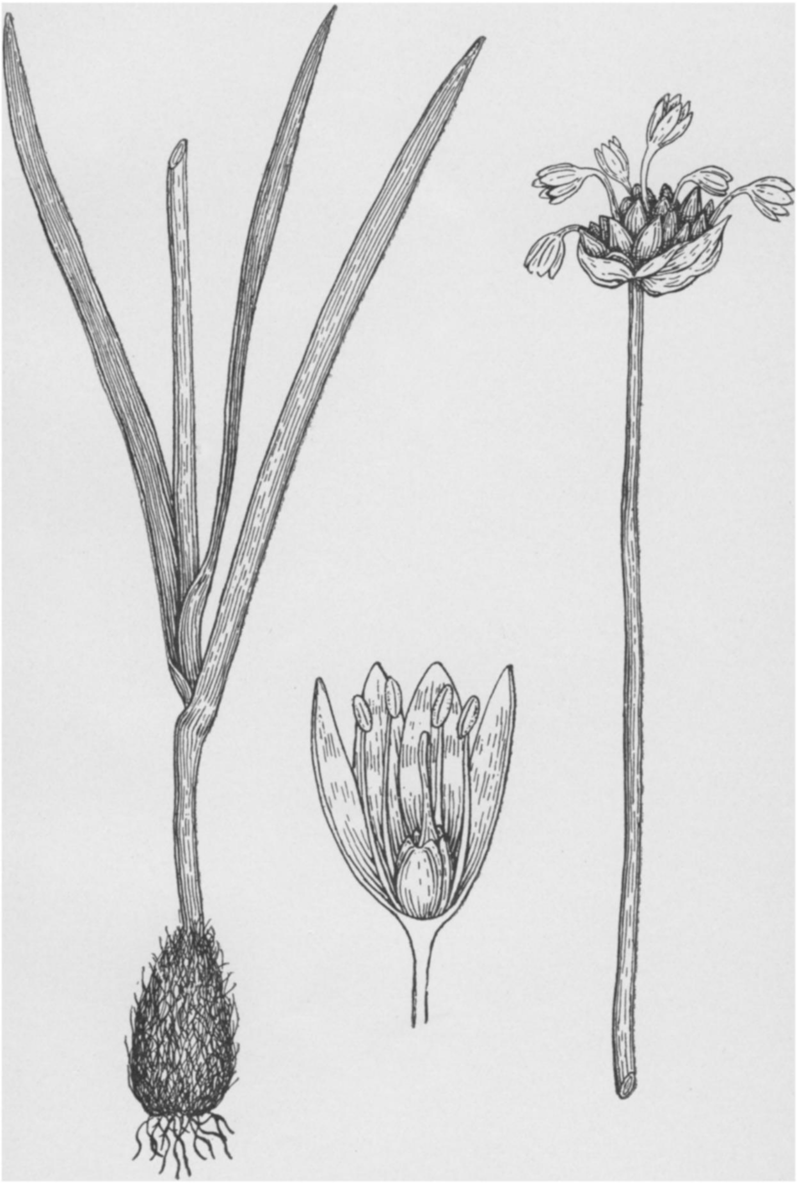
ALLIUM FIBROSUM n. sp.

Bulb with a fibrous coating; stem 2–3 dm. high, subterete, somewhat striate; leaves flat, thickish, 3 mm. wide, 1–1½ dm. long; umbel with numerous bulblets and few flowers on pedicels about 1 cm. long; perianth-segments lanceolate-oblong, obtuse, 6 mm. long; filaments slightly dilated below, ¼ shorter than the segments, and a little longer than the style; anthers oblong; ovary evidently 6 crested, with short rounded crests. (Plate 300.)

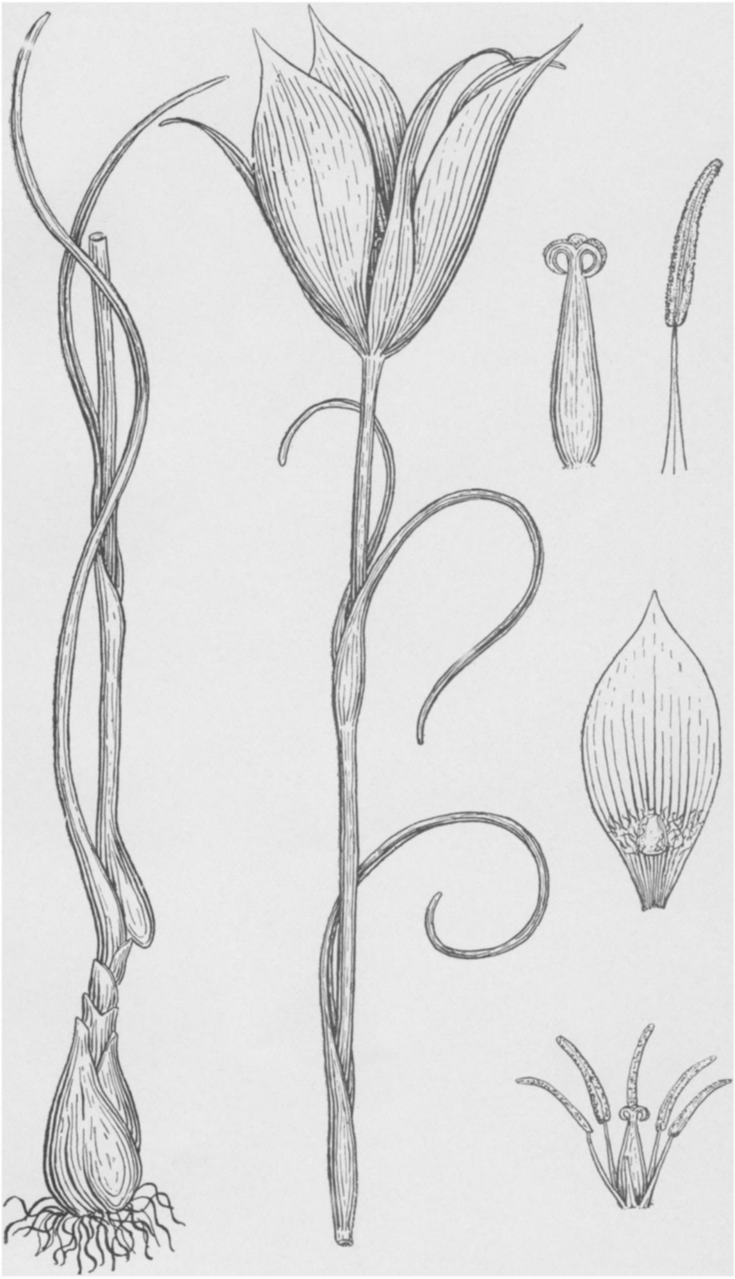
This somewhat resembles *A. Canadense*, from which it is distinguished by the smaller size, the bright red bulblets, and the crests of the ovary. From *A. reticulatum* and *A. Geyeri*, it is easily distinguished by the presence of the bulblets. Collected on a high dry mountain side near Lima, Mont., June 29, 1895, by P. A. Rydberg, (no. 2606).

ALLIUM SIBIRICUM L. Mant. 562. 1767. (*Allium Schaenoprasum* β L. Sp. Pl. 301. 1753. *Allium Schaenoprasum* Authors.)

This has generally been confused with *Allium Schaenoprasum*, but it is evidently a good species. It is much taller than that plant, being generally 5–6 dm. high, has only one basal leaf and generally several stem-leaves, these thick, about 5 mm. in diameter, and broader perianth-segments. *Allium Schaenoprasum* is only 2–3 dm. high, and its base is surrounded by many narrow leaves.



ALLIUM FIBROSUM RYDBERG.



CALOCHORTUS ACUMINATUS RYDBERG.

In rocky places, Sweet Grass Cañon, Crazy Mountains. (Alt. 7000 ft., no. 349.) It has also been collected at Deer Lodge, July 9, 1895, by myself (no. 2601).

CALOCHORTUS ACUMINATUS n. sp.

Stem about 2 dm. high, with a secondary bulb in the axis of the first leaf; leaves 3–5 cm. long, very narrow and involute from a broader sheathing base; sepals narrowly lanceolate, scarious-margined, acuminate, equalling, or more often, exceeding the petals; petals white, rhombic, obovate or oval, acuminate, hairy at the base around the oval-oblong gland; filaments a little dilated, especially below; anthers linear, with slightly sagittate base, tapering a little upward, but not acute; stigma rather large and thick. (Plate 301.)

Dry Mountains, near Lima, P. A. Rydberg, no. 2600, Aug. 5, 1895.

It is apparently nearest related to *C. Nuttallii*, from which it differs by the longer sepals, longer and tapering anthers and the acuminate petals.

HABENARIA DILATATIFORMIS. (*Platenthera gracilis* Lindl. Gen. & Sp. Orch. 288. 1835–9. *Habenaria gracilis* S. Wats. Proc. Am. Acad. 12: 277. 1877. Not Hook. Exot. Fl. *pl. 135*. 1825.)

In general habit this most resembles *H. hyperborea*, from which it differs in the larger white flowers, in the lip, which is broadened at the base as in *H. dilatata*, although less so, and in the spur which is thickened at the end. From *H. dilatata* it differs in the less dilated lip and the shorter more saccate spur, which is slightly shorter than the lip.

Common in marshy places at an altitude of 5000–6000 feet. Spanish Basin by J. H. Flodman (nos. 360 and 361); also collected by P. A. Rydberg, in 1895, at Bozeman (no. 2607), and at Deer Lodge (no. 2608).

HABENARIA STRICTA (Lindl.). *Platentera stricta* Lindl. Gen. & Sp. Orch. 288. 1835–9.

This differs from the preceding in the greenish or purplish flowers, the narrower lip and the very short and much more saccate spur, which is scarcely more than one-half as long as the lip. *Habenaria saccata* Greene, Erythea, 3: 49, 1895, seems, from the description, to be the same. It is fairly common in swampy places of central Montana. Spanish Basin, collected by J. H. Flodman (no. 362), and by myself in 1895, near Mystic Lake, no. 2609.

ALNUS SINUATA (E. Regel).

Alnus viridis β Hook. Fl. Bor. Am. **2**: 157. 1837.

Alnus viridis sinuata E. Regel in DC. Prod. **16**: Part 2, 183. 1868.

Shrub 1–5 m. high; young bark brown and glossy with scattered white lenticels; older bark grayish; leaves 3–10 cm. long, oval, acute or acuminate at both ends, sinuately lobed and doubly and sharply serrate, thin, green and glabrous on both sides, very glutinous when young, in age shining; peduncles racemiform, very warty; staminate catkins 2 cm. long, sessile; pistillate ones shortly ellipsoid, 8–10 mm. long and 6–7 mm. in diameter, on pedicels 3–15 mm. long.

It most resembles *A. viridis*, but is easily distinguished by the thinner, more shining leaves, which are always more or less lobed and quite without any development of pubescence. In *A. viridis*, the veins on the lower surface are more or less ferruginously puberulent. In the same species the pistillate catkins are generally over 1 cm. long. *A. sinuata* has also been confounded with *A. tenuifolia* Nutt., which, according to Sargent, is an older name for *A. incana glauca* Regel or *A. incana virescens* Wats. I have not access to Nuttall's Sylva and am not able to verify this point. In the plate of *A. tenuifolia* in the Silva of North America, the leaves resemble more the present species than *A. incana glauca*, but Prof. Sargent's description and synonomy belongs evidently to the latter. In *A. tenuifolia, i. e., A. incana glauca*, the leaves have much rounder lobes and less sharp dentations, are less acuminate, thicker, and generally somewhat pubescent on the veins. The pistillate catkins are, as a rule, nearly sessile on the common peduncle.

It is fairly common in the mountain regions of Montana. (Flodman, no. 369, Spanish Basin, July 10, 1896.) In the Columbia herbarium there are three specimens of this species, viz.: one collected by Mertens at Sitcha, one by Scouler (no. 59) from the Columbia, and one received from Hooker, but without any indication of collector or locality. Probably it was collected by Douglas.

URTICA CARDIOPHYLLA n. sp.

Urtica dioica (?) Rydberg, Contr. Nat. Herb. 3: 179. 1895.

Stem about 1 m. high, angled and striate and, as well as the leaves, nearly devoid of bristles; leaves broadly cordate, or the upper somewhat narrower, 6–10 cm. long, coarsely toothed, very thin, dark green, perfectly glabrous and shining; petioles about 3 cm. long, very slender; flower clusters small, rather few-flowered, in the specimens seen scarcely more than half as long as the petioles; stipules linear-lanceolate, 5–10 mm. long, very thin.

On a wooded creek bank, near Castle, Montana, Aug. 1, 1896, J. H. Flodman, no. 370. A specimen was collected by the author near Whitman, Neb., in 1893. In the report it was doubtfully referred to *U. dioica* (Rydberg, no. 1790). It is evidently near *U. gracilis*, from which it differs in the broader thinner leaves, the smaller flower-clusters and the nearly complete absence of bristles.

CORIOSPERMUM VILLOSUM n. sp.

Stem 2–4 dm. high, much branched from near the base, the branches divergent, striate, when young with the leaves and bracts villous with many branched hairs, in age glabrate; leaves linear, 2–4 cm. long, 1–3 mm. wide, cuspidate-mucronate; spikes rather dense, with more or less imbricated bracts; lower bracts linear-lanceolate, 5–10 cm. long, the upper ovate-acuminate and cuspidate, 4–5 mm. long and about 3 mm. wide with broad scarious margin; achene 2–2½ mm. long and 2 mm. wide, acutely margined but scarcely at all winged.

The following specimens belong to this species: *Montana:* P. A. Rydberg, no. 2623, 1895, from Manhattan, in flower. *Colorado:* Isabel Mulford, from Salida, in fruit. S. Watson, no. 993, from Carson Desert, Nevada, 1867, seems also to belong here.

There are at least three species of *Coriospermum* in the United States, viz.:

C. hyssopifolium L. with a low branching stem, more or less pubescent when young, very dense spikes with imbricated bracts, which are all broadly ovate, generally over 5 mm. long, and large achenes about 3½–5 mm. long and with broad wing margins. It grows around the Great Lakes and northward to the Arctic and westward to Washington.

C. nitidum Kit (*C. hyssopifolium microcarpum* Wats.), with tall slender perfectly glabrous stem, ascending branches, lax spikes, whose bracts are not overlapping each other and are much narrower and shorter, 3–4 mm. long and generally narrower than the small, 2 mm. long, broadly winged achenes. I have compared the American form with the European and cannot find any character by which to separate it. It grows from Texas, Kansas, Nebraska to Arizona and Washington (?).

C. villosum, described above, which resembles *C. hyssopifolium* in the spikes and the low branching, and *C. nitidum* in the size of bracts and achenes and narrow leaves, but differs from both by the lack of the wing-margin and by the longer pubescence.

New or noteworthy American Grasses.—VI.

By Geo. V. Nash.

Paspalum bifidum (A. Bertol.)

Panicum Floridanum Trin. Mem. Acad. St. Petersb. (VI.) 3: Pt. 2, 248. 1834. Not *Paspalum Floridanum* Mx. 1803.

Panicum bifidum A. Bertol. in Mem. Acad. Sci. Bolog. 2: 598. *pl. 41. f. 2, e–h.* 1850.

Panicum Alabamense Trin.; Steud. Syn. Pl. Gram. 64. 1855.

Paspalum racemulosum Nutt.; Chapm. Fl. S. St. 571. 1860.

Paspalum interruptum Wood, Classbook, 783. 1861.

The above seems to be the oldest available name for this plant, the *Panicum Floridanum* of Trinius being excluded by the *Paspalum* of the same name previously published by Michaux. The excellent plate and description of Bertoloni, and the fact that his plant was from Alabama, leaves little to be desired in its identification. I have been unable to ascertain where Dr. Chapman secured the name of *P. racemulosum* Nutt. The publication by Nuttall of such a name I have failed to discover up to the present. The only name resembling that accredited to Nuttall by Chapman is *P. racemosum*, published by the former in the Transactions of the American Philosophical Society ((II.) 5: 145. 1837), but this is antedated by that of Lamarck. Nuttall secured his plant in southeastern Indian Territory, and just what he had I am as yet unable to determine. From a comparison of our plant with his description, I think it will become apparent at once that whatever plant he did have, it was some other than that which has